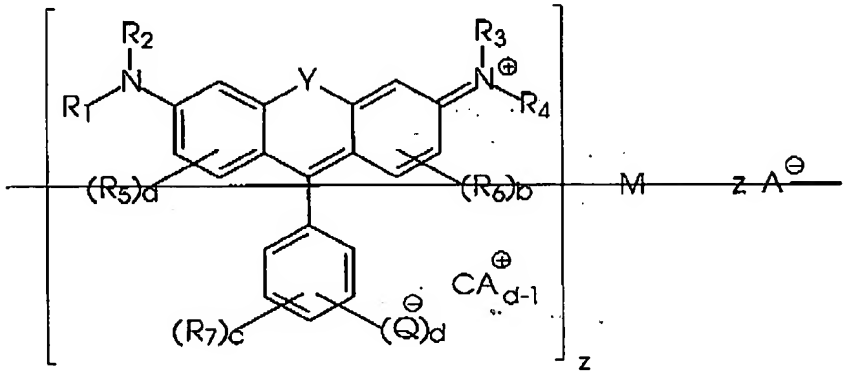
Application No. 10/607,373

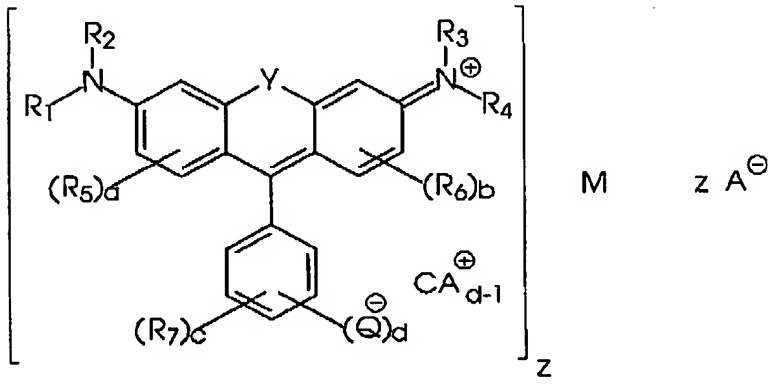
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

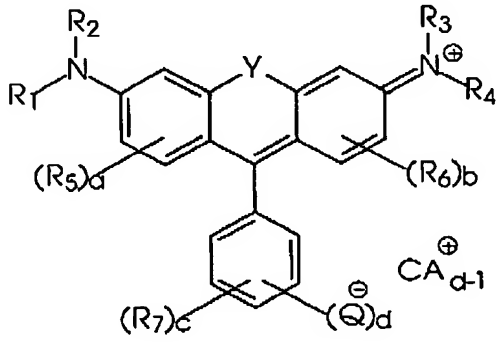
LISTING OF CLAIMS:

1. (Currently amended) A compound of the formula

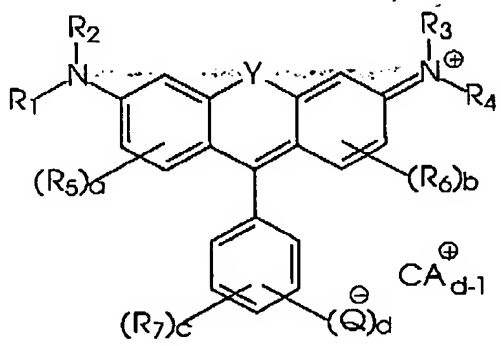




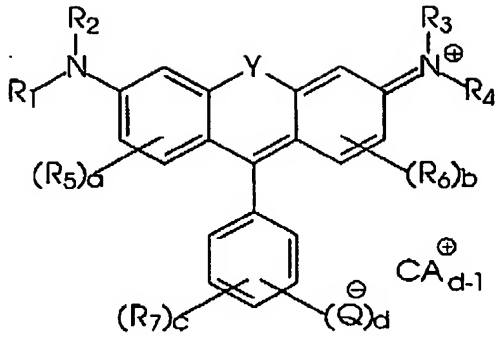
wherein M is either (1) a metal ion having a positive charge of ~~+y~~ +p wherein ~~y~~ p is an integer which is at least 2, said metal ion being capable of forming a compound with at least two



chromogen moieties, or (2) a metal-containing moiety capable of forming a compound with at least two



chromogen moieties, z is an integer representing the number of



chromogen moieties associated with the metal and is at least 2, R_1, R_2, R_3, and R_4 each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, ~~wherein R_1 and R_2 can be joined together to form a ring,~~

~~wherein R_3 and R_4 can be joined together to form a ring, and wherein R_1, R_2, R_3, and R_4 can each be joined to a phenyl ring in the central structure,~~ a and b each, independently of the others, is an integer which is 0, 1, 2, or 3, c is an integer which is 0, 1, 2, 3, or 4, each R_5, R_6, and R_7, independently of the others, is (i) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (ii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iii) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, (iv) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, (v) a halogen atom, (vi) an ester group, (vii) an amide group, (viii) a sulfone group, (ix) an amine group or ammonium group, (x) a nitrile group, (xi) a nitro group, (xii) a hydroxy group, (xiii) a cyano group, (xiv) a pyridine or pyridinium group, (xv) an ether group, (xvi) an aldehyde group, (xvii) a ketone group, (xviii) a carbonyl group, (xix) a thiocarbonyl group, (xx) a sulfate group, (xxi) a sulfide group, (xxii) a sulfoxide group, (xxiii) a phosphine or phosphonium group, (xxiv) a phosphate group, (xxv) a

mercapto group, (xxvi) a nitroso group, (xxvii) an acyl group, (xxviii) an acid anhydride group, (xxix) an azide group, (xxx) an azo group, (xxxi) a cyanato group, (xxxii) an isocyanato group, (xxxiii) a thiocyanato group, (xxxiv) an isothiocyanato group, (xxxv) a urethane group, or (xxxvi) a urea group, ~~wherein R_5, R_6, and R_7 can each be joined to a phenyl ring in the central structure.~~

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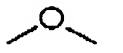

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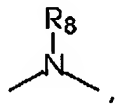

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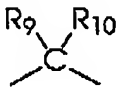

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R_8, R_9, and R_{10} each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched,

saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, provided that the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 16, Q- is a COO^- group or a SO_3^- group, d is an integer which is 1, 2, 3, 4, or 5, A is an anion, and CA is either a hydrogen atom or a cation associated with all but one of the Q- groups.

2. (Original) A compound according to claim 1 wherein M is a metal ion of a metal selected from magnesium, calcium, strontium, barium, radium, aluminum, gallium, germanium, indium, tin, antimony, tellurium, thallium, lead, bismuth, polonium, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, zirconium, niobium molybdenum, technetium, ruthenium, rhodium, palladium, silver, cadmium, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, mercury, metals of the lanthanide series, metals of the actinide series, and mixtures thereof.

3. (Original) A compound according to claim 1 wherein M is a metal ion of a metal selected from zinc, calcium, bismuth, tin, iron, copper, aluminum, nickel, titanium, chromium, or mixtures thereof.

4. (Original) A compound according to claim 1 wherein M is a zinc metal ion.

5. (Original) A compound according to claim 1 wherein M is a metal-containing moiety which is a metal ionic moiety.

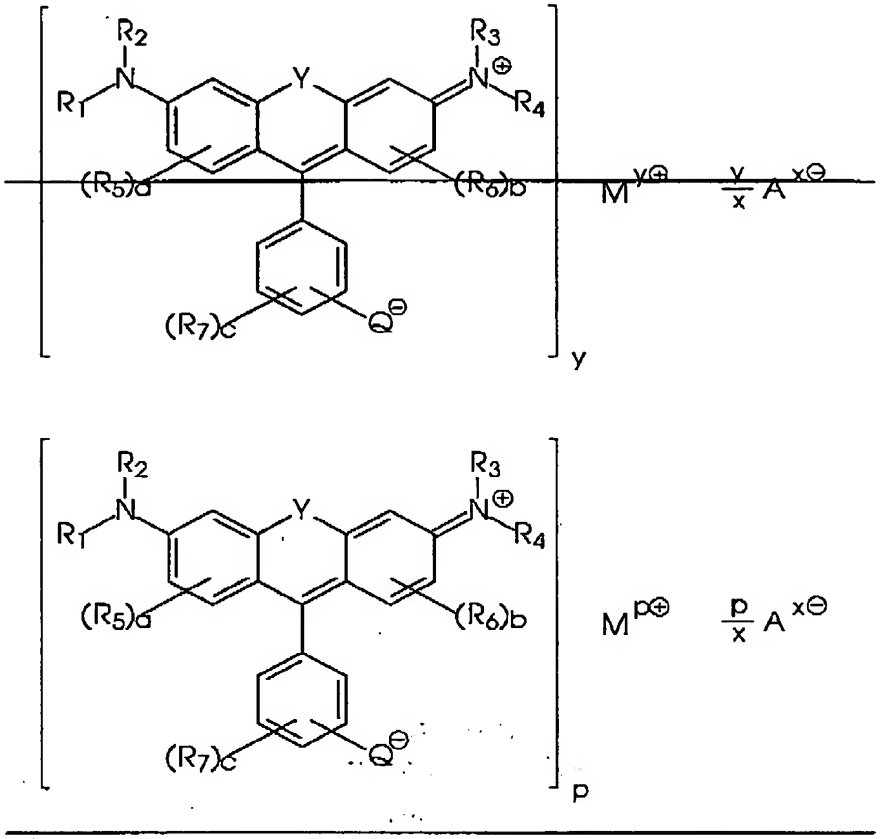
6. (Original) A compound according to claim 1 wherein M is a metal-containing moiety which is a metal coordination compound.

7. (Original) A compound according to claim 1 wherein M is a metal-containing moiety which is a heteropolyacid.

8. (Original) A compound according to claim 7 wherein the heteropolyacid is a phosphotungstic acid, a silicotungstic acid, a phosphomolybdic acid, or a mixture thereof.

9. (Original) A compound according to claim 7 wherein the heteropolyacid is a mixture of phosphomolybdic acid and phosphotungstic acid.

10. (Currently Amended) A compound of the formula



wherein M is a metal cation, ~~y~~ p is an integer representing the charge on the metal cation and is at least 2, A is an anion, x is an integer representing the charge on the anion, R_1, R_2, R_3, and R_4 each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms

either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, ~~wherein R_1 and R_2 can be joined together to form a ring, wherein R_3 and R_4 can be joined together to form a ring, and wherein R_1, R_2, R_3, and R_4 can each be joined to a phenyl ring in the central structure,~~ a and b each, independently of the others, is an integer which is 0, 1, 2, or 3, c is an integer which is 0, 1, 2, 3, or 4, each R_5, R_6, and R_7, independently of the others, is (i) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (ii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iii) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, (iv) an alkylaryl group, including unsubstituted and

substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, (v) a halogen atom, (vi) an ester group, (vii) an amide group, (viii) a sulfone group, (ix) an amine group or ammonium group, (x) a nitrile group, (xi) a nitro group, (xii) a hydroxy group, (xiii) a cyano group, (xiv) a pyridine or pyridinium group, (xv) an ether group, (xvi) an aldehyde group, (xvii) a ketone group, (xviii) a carbonyl group, (xix) a thiocarbonyl group, (xx) a sulfate group, (xxi) a sulfide group, (xxii) a sulfoxide group, (xxiii) a phosphine or phosphonium group, (xxiv) a phosphate group, (xxv) a mercapto group, (xxvi) a nitroso group, (xxvii) an acyl group, (xxviii) an acid anhydride group, (xxix) an azide group, (xxx) an azo group, (xxxi) a cyanato group, (xxxii) an isocyanato group, (xxxiii) a thiocyanato group, (xxxiv) an isothiocyanato group, (xxxv) a urethane group, or (xxxvi) a urea group, ~~wherein R_5, R_6, and R_7 can each be joined to a phenyl ring in the central structure,~~

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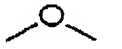
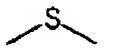
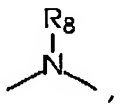
 ,

 ,

 ,

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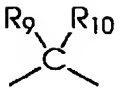


R_8, R_9, and R_{10} each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, provided that the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 16, and Q- is a COO^- group or a SO_3^- group.

11. (Original) A compound according to claim 1 wherein a, b, and c are each zero.

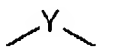
12. (Original) A compound according to claim 1 wherein d is 1.

13. (Original) A compound according to claim 1 wherein d is 2.

14. (Original) A compound according to claim 1 wherein d is 1 and Q^- is a COO^- group.

15. (Original) A compound according to claim 1 wherein d is 1 and Q^- is a SO_3^- group.

16. (Original) A compound according to claim 1 wherein



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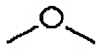
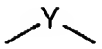


17. (Original) A compound according to claim 1 wherein



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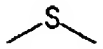

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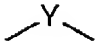
18. (Original) A compound according to claim 1 wherein



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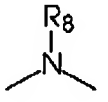

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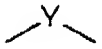
19. (Original) A compound according to claim 1 wherein



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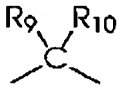

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20. (Currently Amended) A compound according to claim 1 wherein at least one of R_1, R_2, R_3, and R_4 is an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group.

21. (Original) A compound according to claim 20 wherein the alkyl group is a linear alkyl group.

22. (Original) A compound according to claim 20 wherein the alkyl group is a branched alkyl group.

23. (Original) A compound according to claim 20 wherein the alkyl group is a saturated alkyl group.

24. (Original) A compound according to claim 20 wherein the alkyl group is an unsaturated alkyl group.

25. (Original) A compound according to claim 20 wherein the alkyl group is a cyclic alkyl group.

26. (Original) A compound according to claim 20 wherein the alkyl group is a substituted alkyl group.

27. (Original) A compound according to claim 20 wherein the alkyl group is an unsubstituted alkyl group.

28. (Original) A compound according to claim 20 wherein the alkyl group has at least about 18 carbon atoms.

29. (Original) A compound according to claim 20 wherein at least one hetero atom selected from oxygen, nitrogen, sulfur, silicon, or phosphorus is present in the alkyl group.

30. (Original) A compound according to claim 20 wherein no hetero atoms are present in the alkyl group.

31. (Currently Amended) A compound according to claim 1 wherein at least one of R_1, R_2, R_3, and R_4 is an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group.

32. (Original) A compound according to claim 31 wherein the aryl group is a substituted aryl group.

33. (Original) A compound according to claim 31 wherein the aryl group is an unsubstituted aryl group.

34. (Original) A compound according to claim 31 wherein at least one hetero atom selected from oxygen, nitrogen, sulfur, silicon, or phosphorus is present in the aryl group.

35. (Original) A compound according to claim 31 wherein no hetero atoms are present in the aryl group.

36. (Currently Amended) A compound according to claim 1 wherein at least one of R_1, R_2, R_3, and R_4 is an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group.

37. (Original) A compound according to claim 36 wherein the arylalkyl group is a substituted arylalkyl group.

38. (Original) A compound according to claim 36 wherein the arylalkyl group is an unsubstituted arylalkyl group.

39. (Original) A compound according to claim 36 wherein at least one hetero atom selected from oxygen, nitrogen, sulfur, silicon, or phosphorus is present in the arylalkyl group.

40. (Original) A compound according to claim 36 wherein no hetero atoms are present in the arylalkyl group.

41. (Currently Amended) A compound according to claim 1 wherein at least one of R_1, R_2, R_3, and R_4 is an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group.

42. (Original) A compound according to claim 41 wherein the alkylaryl group is a substituted alkylaryl group.

43. (Original) A compound according to claim 41 wherein the alkylaryl group is an unsubstituted alkylaryl group.

44. (Original) A compound according to claim 41 wherein at least one hetero atom selected from oxygen, nitrogen, sulfur, silicon, or phosphorus is present in the alkylaryl group.

45. (Original) A compound according to claim 41 wherein no hetero atoms are present in the alkylaryl group.

46. (Cancelled)

47. (Cancelled)

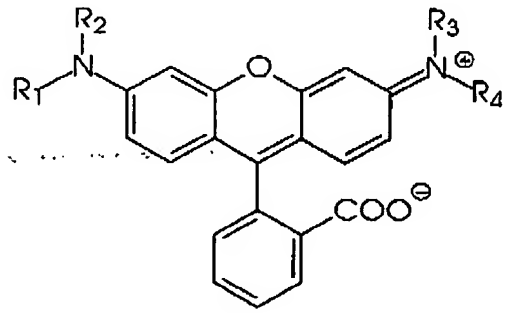
48. (Cancelled)

49. (Original) A compound according to claim 1 wherein the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 32.

50. (Original) A compound according to claim 1 wherein the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 48.

51. (Original) A compound according to claim 1 wherein the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 72.

52. (Original) A compound according to claim 1 wherein the chromogen is of the formula



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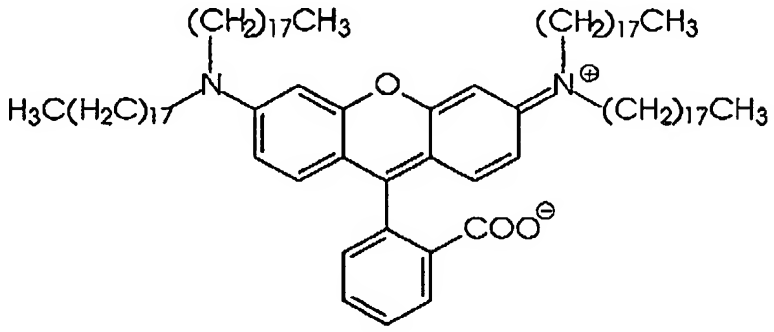
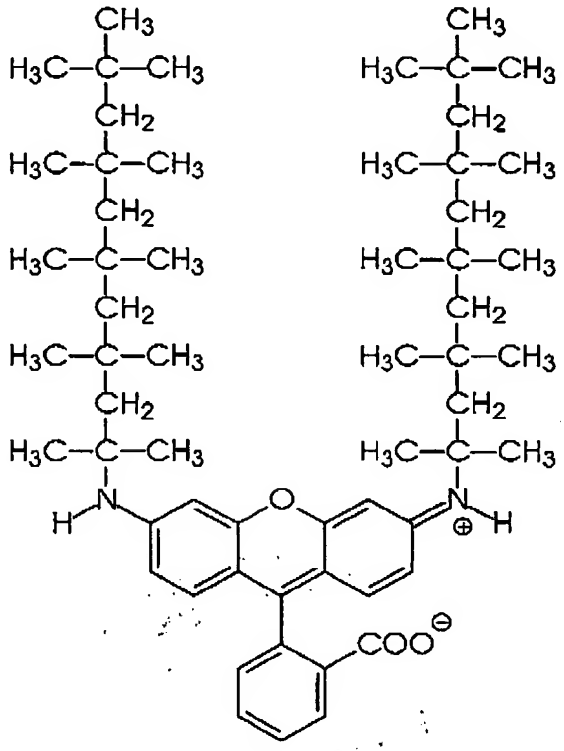
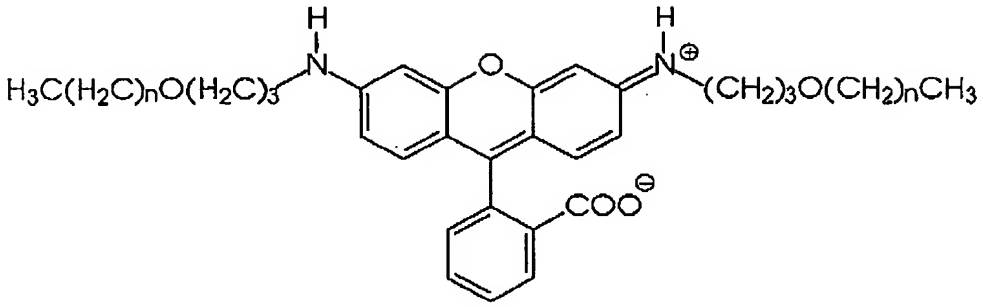
53. (Original) A compound according to claim 1 wherein the chromogen is of the formula



54. (Original) A compound according to claim 1 wherein the chromogen is of the formula

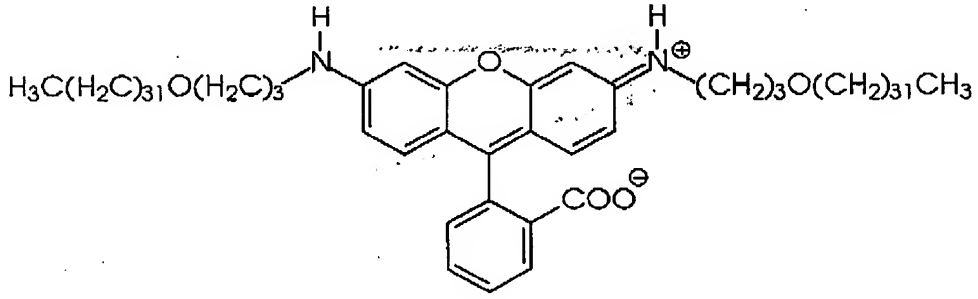


55. (Original) A compound according to claim 1 wherein the chromogen is of the formula



wherein n is at least about 11.

56. (Original) A compound according to claim 1 wherein the chromogen is of the formula



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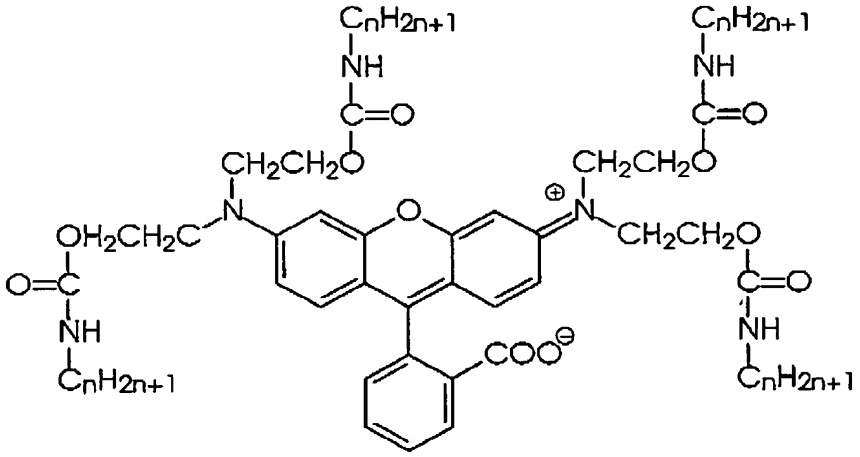
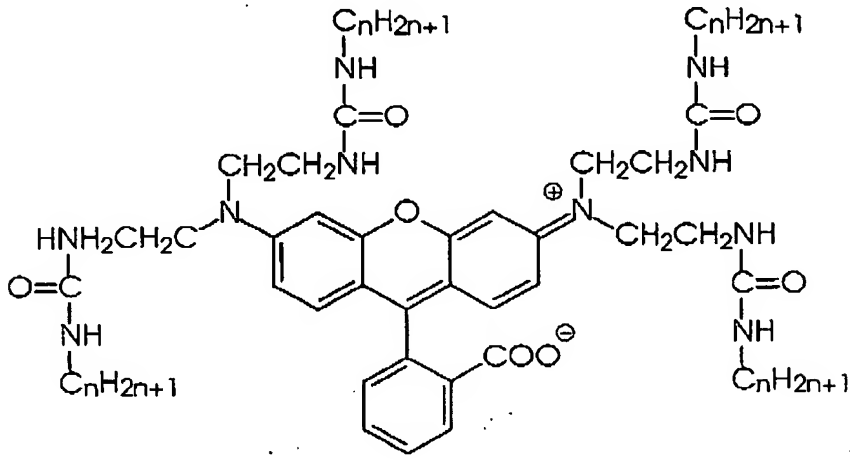
57. (Original) A compound according to claim 1 wherein the chromogen is of the formula



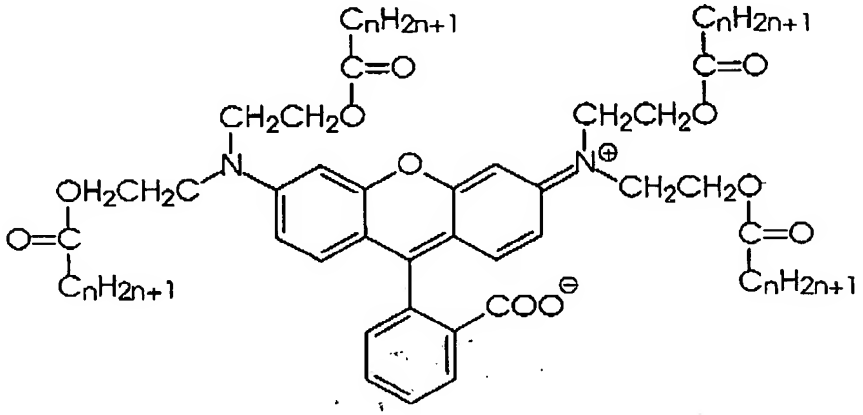
wherein n is at least about 12.

58. (Original) A compound according to claim 1 wherein the chromogen is of the formula



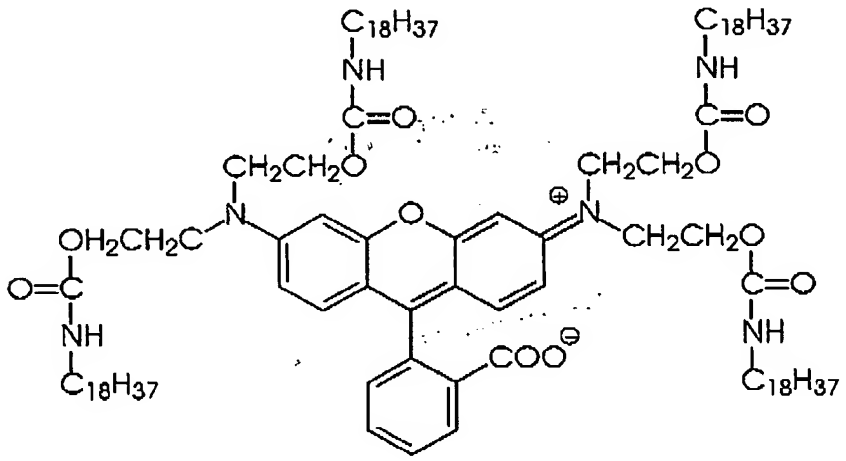
wherein n is at least about 12.

59. (Original) A compound according to claim 1 wherein the chromogen is of the formula

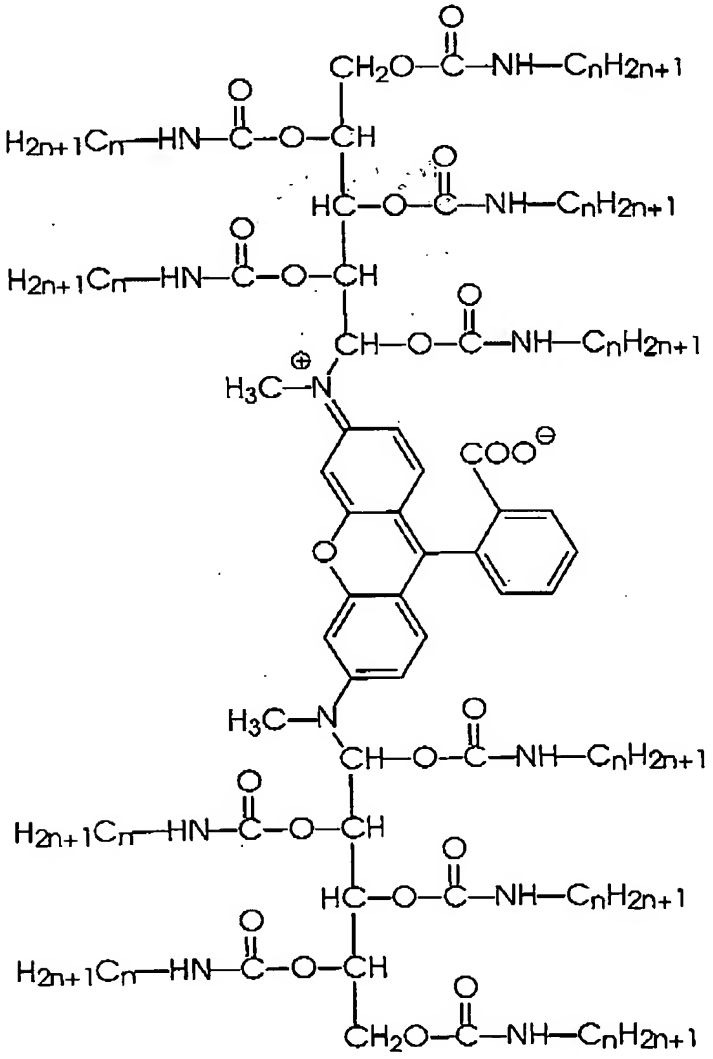


wherein n is at least about 12.

60. (Original) A compound according to claim 1 wherein the chromogen is of the formula

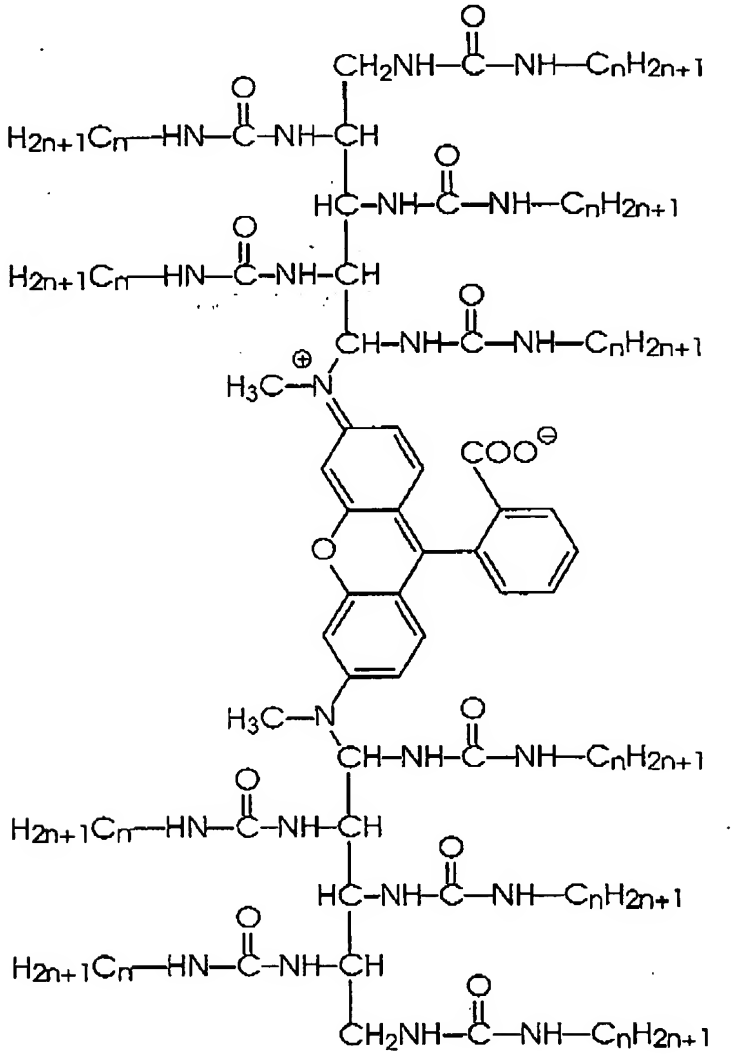


61. (Original) A compound according to claim 1 wherein the chromogen is of the formula



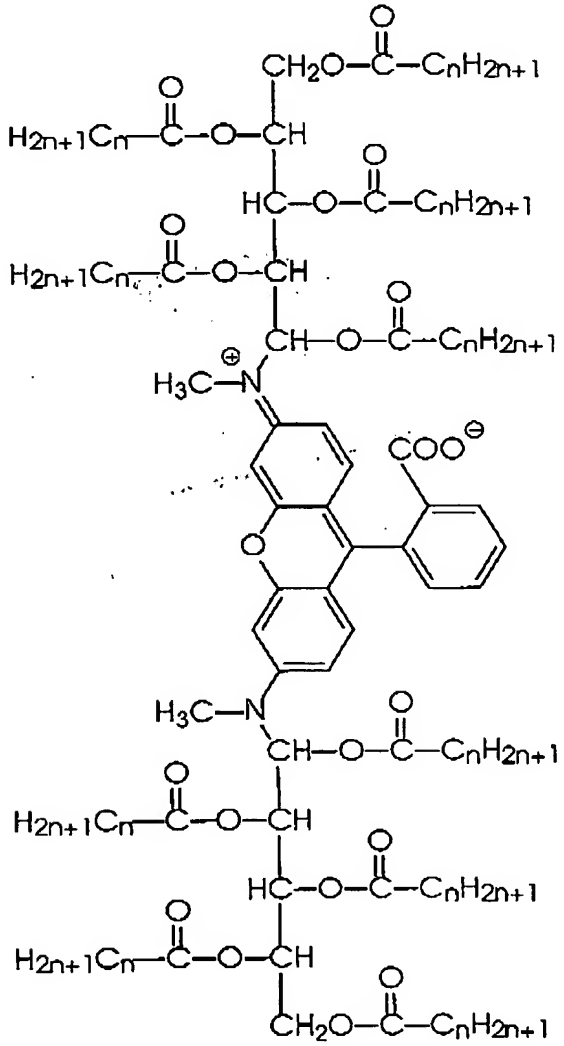
wherein n is at least about 12.

62. (Original) A compound according to claim 1 wherein the chromogen is of the formula



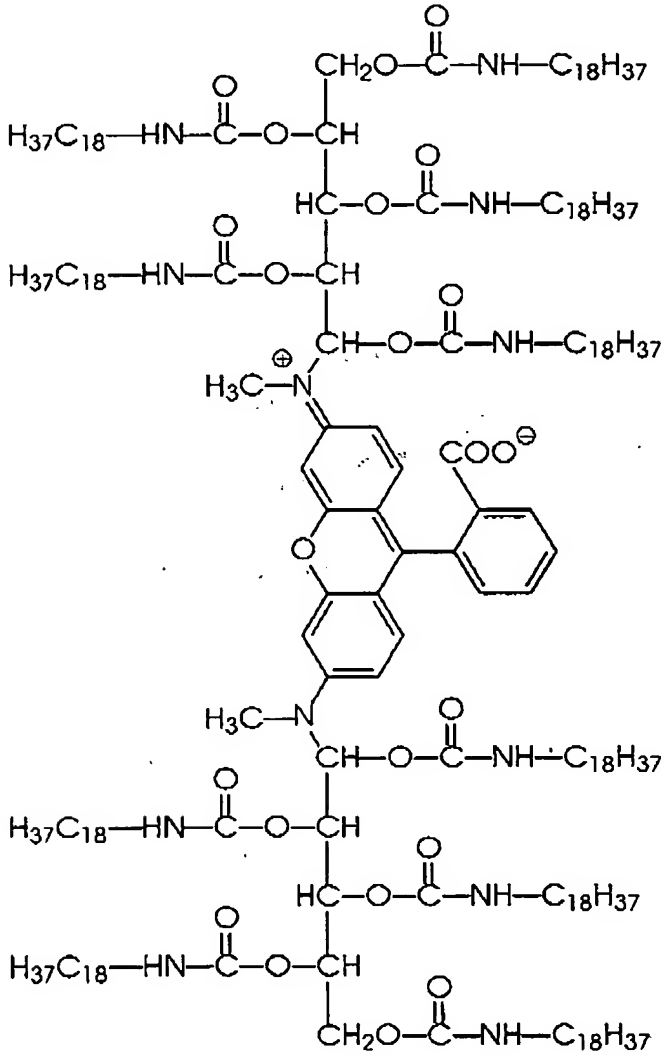
wherein n is at least about 12.

63. (Original) A compound according to claim 1 wherein the chromogen is of the formula



wherein n is at least about 12.

64. (Original) A compound according to claim 1 wherein the chromogen is of the formula



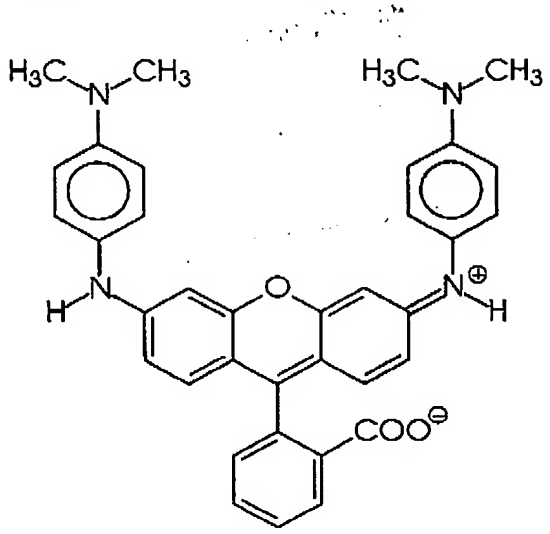
65. (Cancelled)

66. (Cancelled)

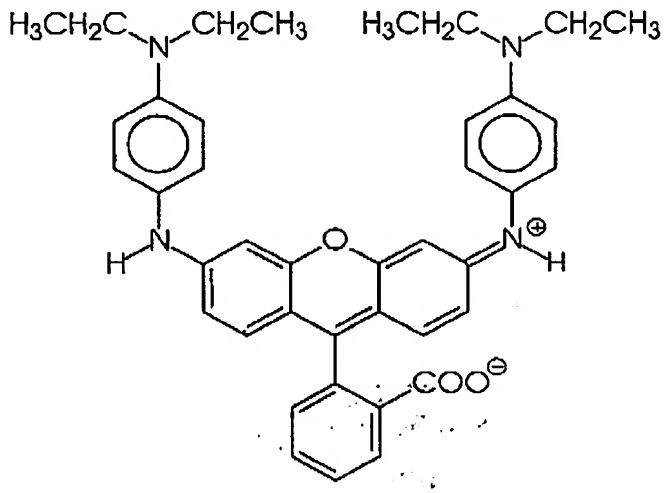
67. (Cancelled)

68. (Cancelled)

69. (Original) A compound according to claim 1 wherein the chromogen is of the formula



70. (Original) A compound according to claim 1 wherein the chromogen is of the formula



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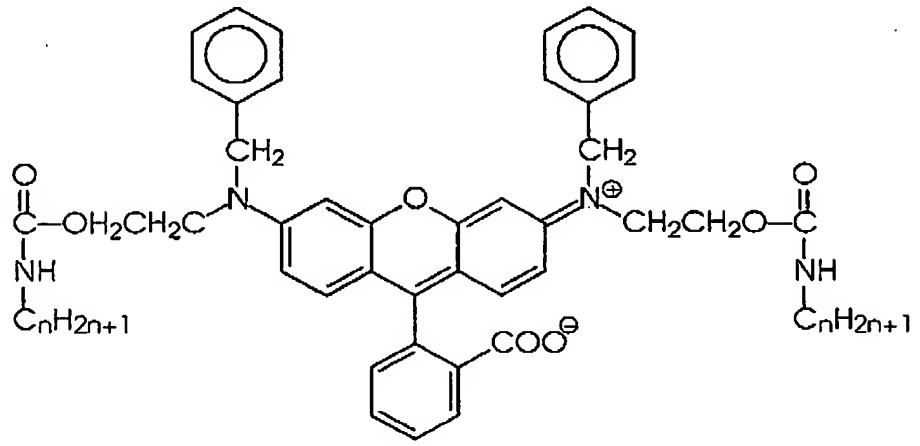
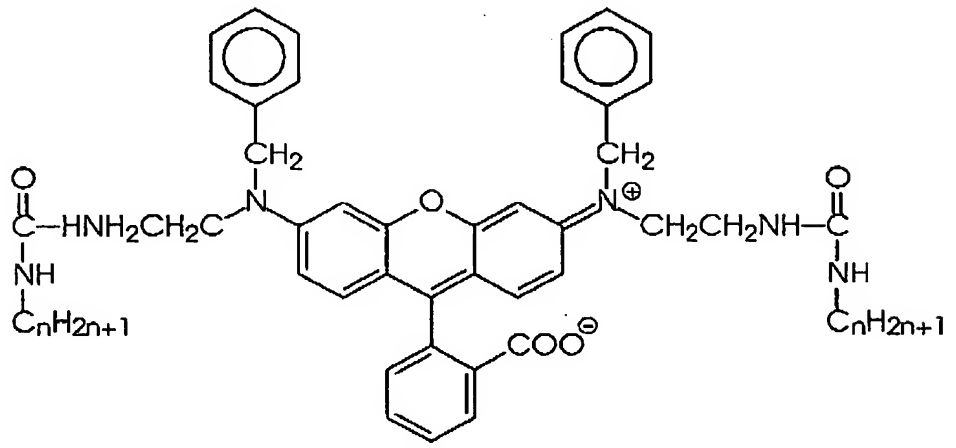
71. (Original) A compound according to claim 1 wherein the chromogen is of the formula



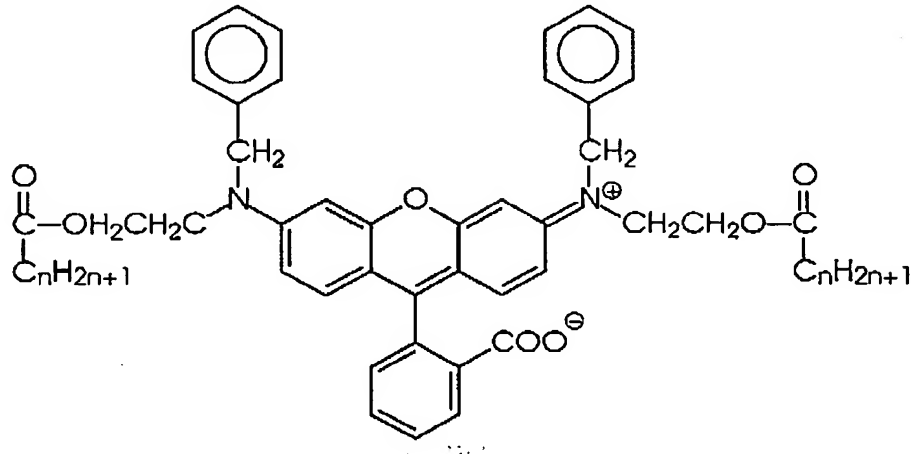
wherein n is at least about 12.

72. (Original) A compound according to claim 1 wherein the chromogen is of the formula



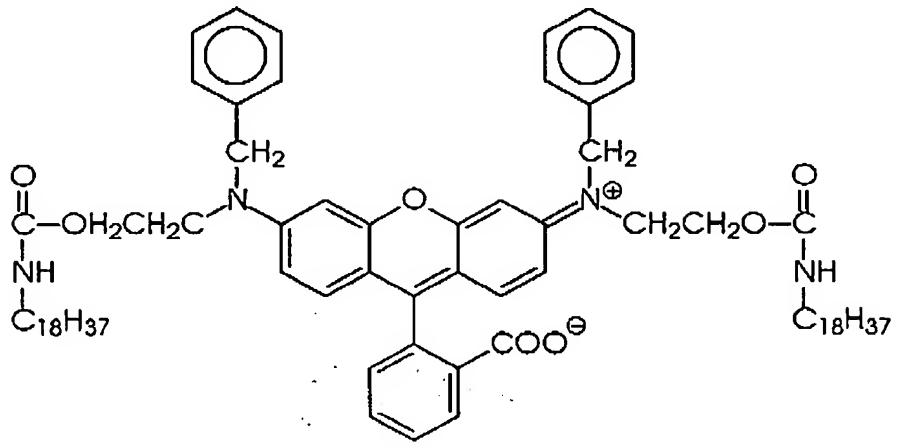
wherein n is at least about 12.

73. (Original) A compound according to claim 1 wherein the chromogen is of the formula

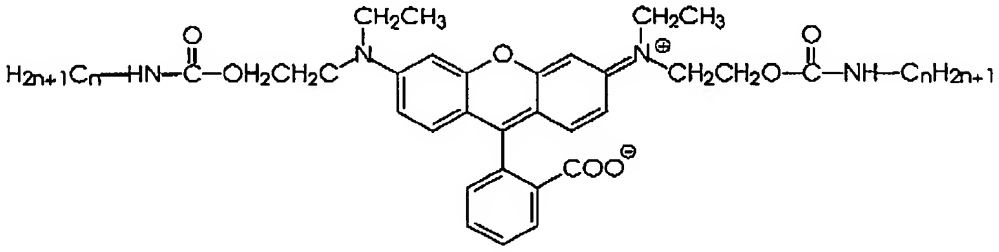


wherein n is at least about 12.

74. (Original) A compound according to claim 1 wherein the chromogen is of the formula

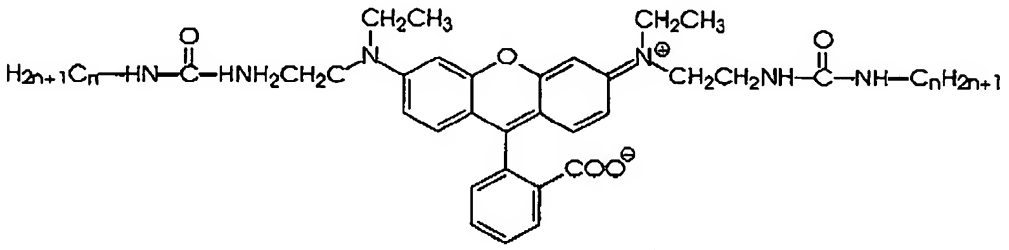


75. (Original) A compound according to claim 1 wherein the chromogen is of the formula



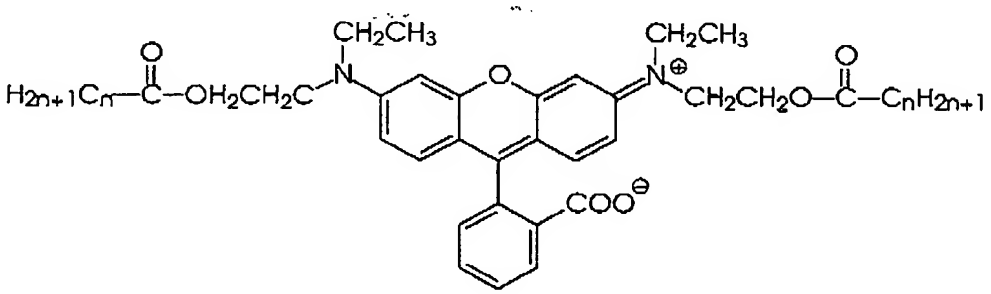
wherein n is at least about 12.

76. (Original) A compound according to claim 1 wherein the chromogen is of the formula



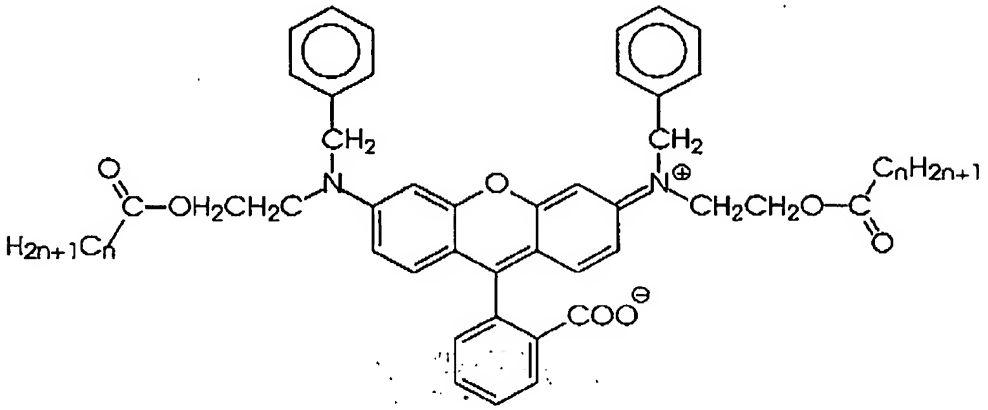
wherein n is at least about 12.

77. (Original) A compound according to claim 1 wherein the chromogen is of the formula



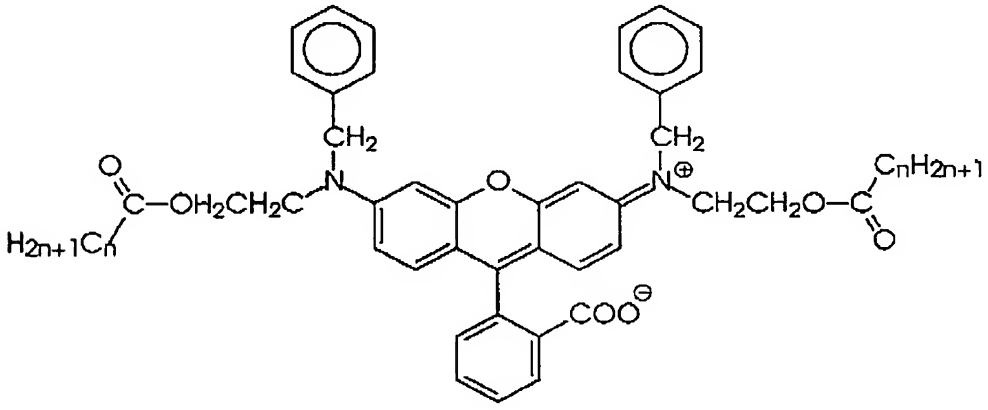
wherein n is at least about 12.

78. (Original) A compound according to claim 1 wherein the chromogen is of the formula



wherein n has an average value of at least about 12.

79. (Original) A compound according to claim 1 wherein the chromogen is of the formula



wherein n has an average value of about 50.

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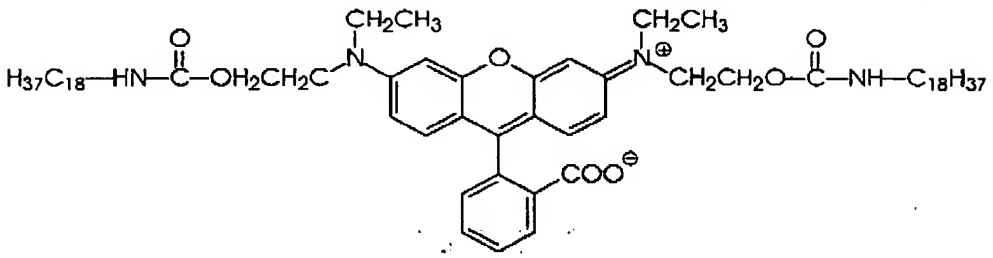
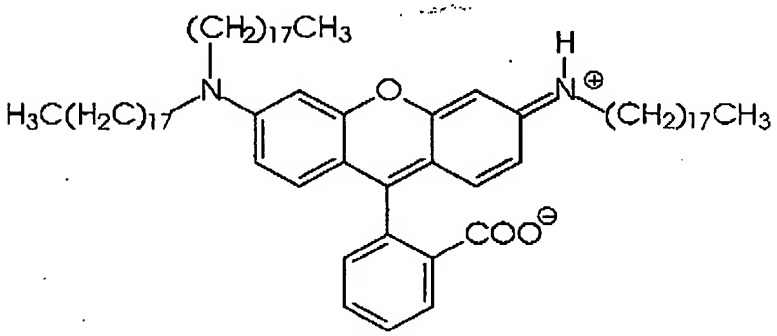
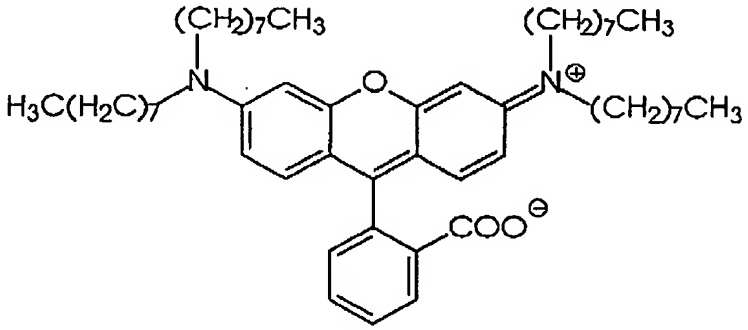
80. (Original) A compound according to claim 1 wherein the chromogen is of the formula



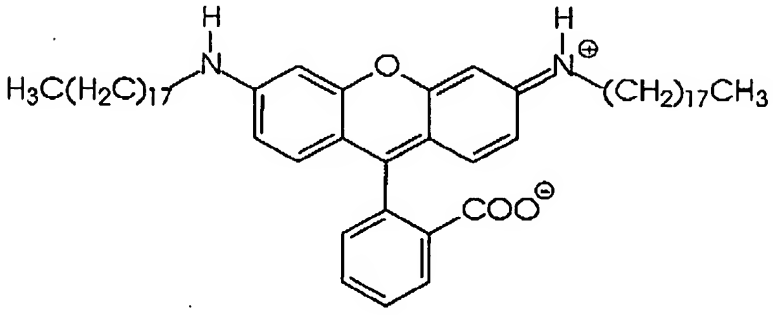
81. (Original) A compound according to claim 1 wherein the chromogen is of the formula



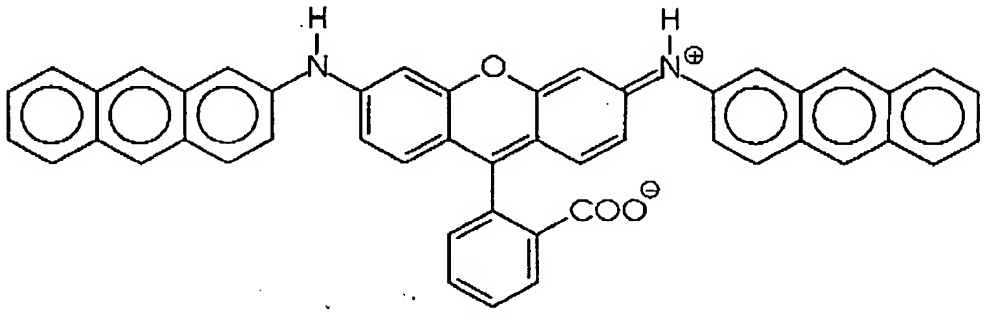
82. (Original) A compound according to claim 1 wherein the chromogen is of the formula



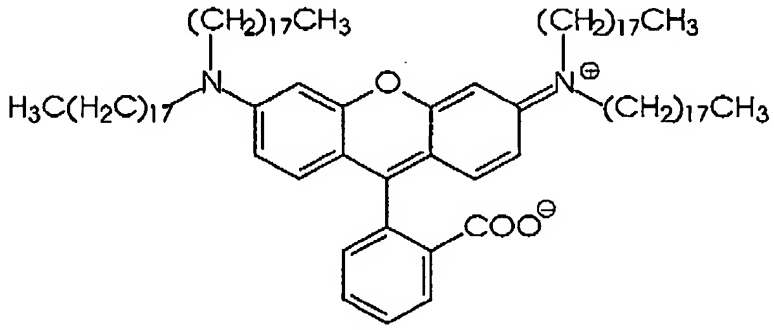
83. (Original) A compound according to claim 1 wherein the chromogen is of the formula



84. (Original) A compound according to claim 1 wherein the chromogen is of the formula

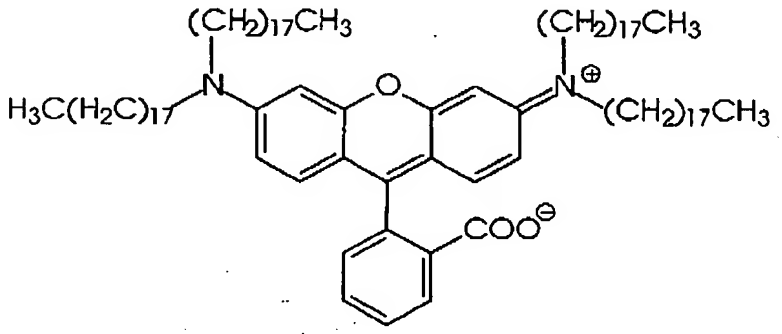


85. (Currently Amended) A compound according to claim 1 wherein M is a zinc cation, ~~y~~ p is 2, and the chromogen is of the formula



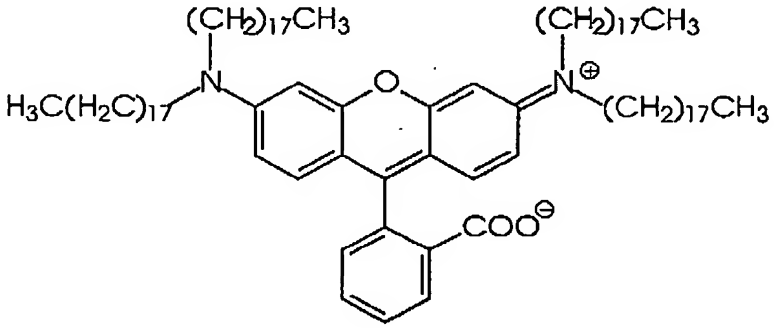
86. (Original) A compound according to claim 85 wherein z is 2.

87. (Currently Amended) A compound according to claim 1 wherein M is a calcium cation, ~~y~~ p is 2, and the chromogen is of the formula



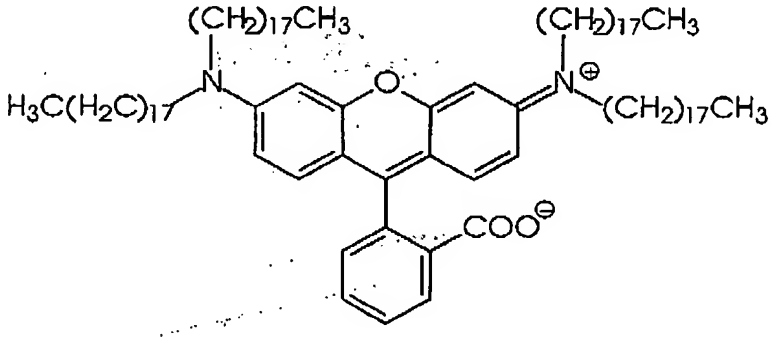
88. (Previously Presented) A compound according to claim 87 wherein z is 2.

89. (Currently Amended) A compound according to claim 1 wherein M is a bismuth cation, ~~y~~ p is 3, and the chromogen is of the formula



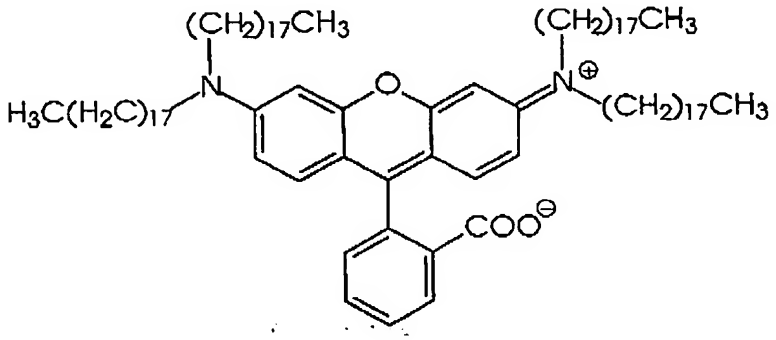
90. (Original) A compound according to claim 89 wherein z is 3.

91. (Currently Amended) A compound according to claim 1 wherein M is a tin cation, ~~y~~ p is 2, and the chromogen is of the formula



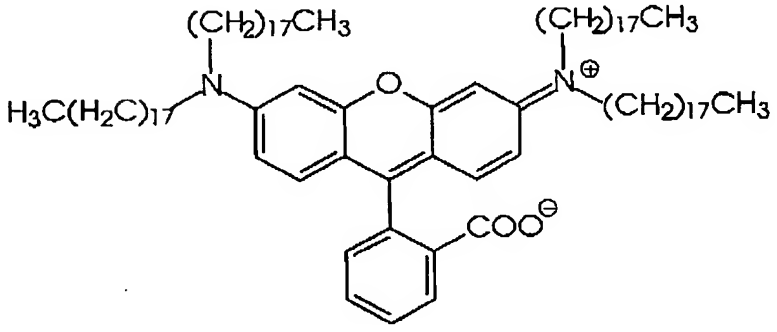
92. (Original) A compound according to claim 91 wherein z is 2.

93. (Currently Amended) A compound according to claim 1 wherein M is an iron cation, ~~y~~ p is 2, and the chromogen is of the formula



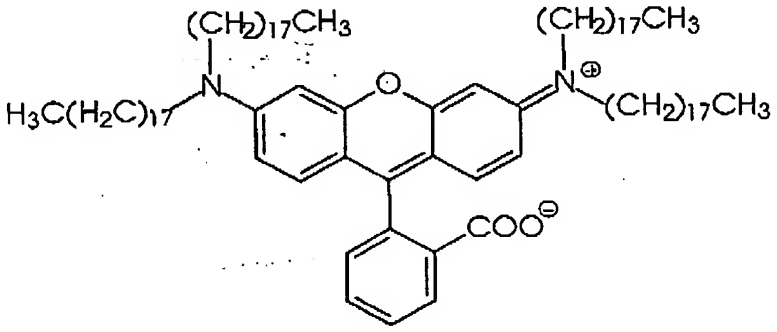
94. (Original) A compound according to claim 93 wherein z is 2.

95. (Currently Amended) A compound according to claim 1 wherein M is a copper cation, ~~y~~ p is 2, and the chromogen is of the formula



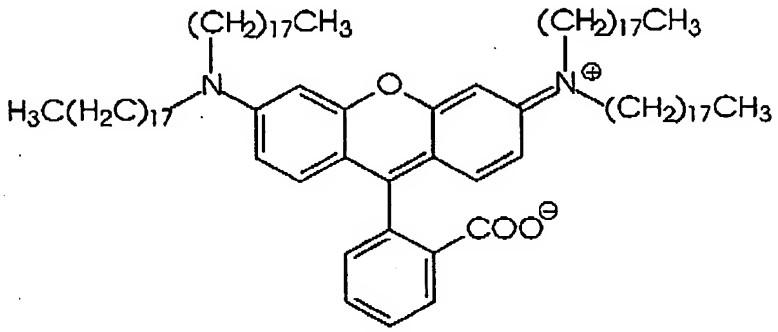
96. (Original) A compound according to claim 95 wherein z is 2.

97. (Currently Amended) A compound according to claim 1 wherein M is an aluminum cation, ~~y~~ p is 3, and the chromogen is of the formula



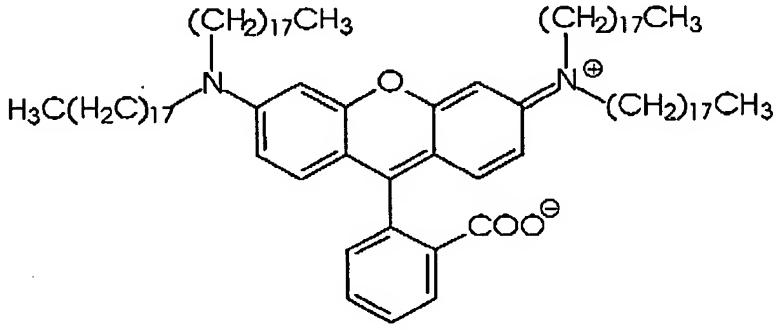
98. (Original) A compound according to claim 97 wherein z is 3.

99. (Currently Amended) A compound according to claim 1 wherein M is a nickel cation, ~~y~~ p is 2, and the chromogen is of the formula



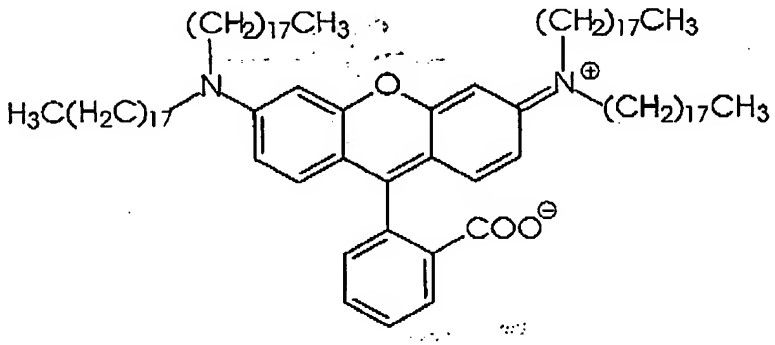
100. (Original) A compound according to claim 99 wherein z is 2.

101. (Currently Amended) A compound according to claim 1 wherein M is a titanium cation, ~~y~~ p is 4, and the chromogen is of the formula



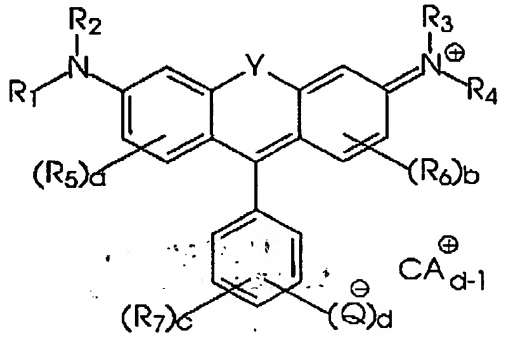
102. (Original) A compound according to claim 101 wherein z is 4.

103. (Currently Amended) A compound according to claim 1 wherein M is a chromium cation, ~~y~~ p is 3, and the chromogen is of the formula



104. (Original) A compound according to claim 103 wherein z is 3.

105. (Currently Amended) A compound comprising the reaction product of (a) a chromogen of the formula

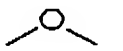


wherein R_1, R_2, R_3, and R_4 each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl

portion and the aryl portion of the alkylaryl group, ~~wherein R_1 and R_2 can be joined together to form a ring, wherein R_3 and R_4 can be joined together to form a ring, and wherein R_1, R_2, R_3, and R_4 can each be joined to a phenyl ring in the central structure,~~ a and b each, independently of the others, is an integer which is 0, 1, 2, or 3, c is an integer which is 0, 1, 2, 3, or 4, each R_5, R_6, and R_7, independently of the others, is (i) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (ii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iii) an arylalkyl group, including unsubstituted and substituted arylalkyl groups, wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, (iv) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, (v) a halogen atom, (vi) an ester group, (vii) an amide group, (viii) a sulfone group, (ix) an amine group or ammonium group, (x) a nitrile group, (xi) a nitro group, (xii) a hydroxy group, (xiii) a cyano group, (xiv) a pyridine or pyridinium group, (xv) an ether group, (xvi) an aldehyde group, (xvii) a ketone group, (xviii) a carbonyl group, (xix) a thiocarbonyl group, (xx) a sulfate group, (xxi) a

sulfide group, (xxii) a sulfoxide group, (xxiii) a phosphine or phosphonium group, (xxiv) a phosphate group, (xxv) a mercapto group, (xxvi) a nitroso group, (xxvii) an acyl group, (xxviii) an acid anhydride group, (xxix) an azide group, (xxx) an azo group, (xxxi) a cyanato group, (xxxii) an isocyanato group, (xxxiii) a thiocyanato group, (xxxiv) an isothiocyanato group, (xxxv) a urethane group, or (xxxvi) a urea group, ~~wherein R_5, R_6, and R_7 can each be joined to a phenyl ring in the central structure.~~


is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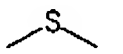
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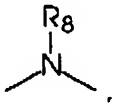
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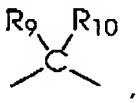
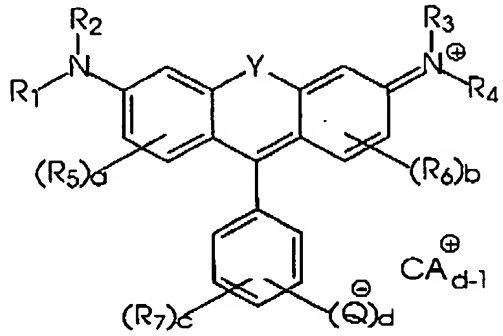
or


,

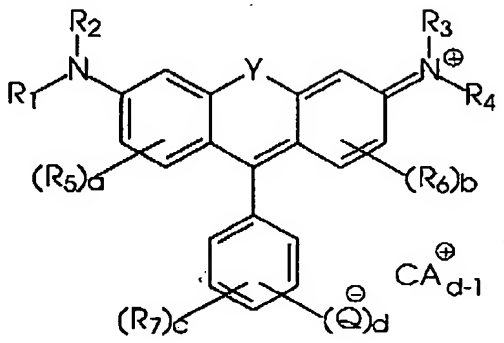
R_8, R_9, and R_{10} each, independently of the others, is (i) a hydrogen atom, (ii) an alkyl group, including linear, branched, saturated, unsaturated, cyclic, substituted, and unsubstituted alkyl groups, and wherein hetero atoms either may or may not be present in the alkyl group, (iii) an aryl group, including unsubstituted and substituted aryl groups, and wherein hetero atoms either may or may not be present in the aryl group, (iv) an arylalkyl group, including unsubstituted and substituted arylalkyl groups,

wherein the alkyl portion of the arylalkyl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the arylalkyl group, or (v) an alkylaryl group, including unsubstituted and substituted alkylaryl groups, wherein the alkyl portion of the alkylaryl group can be linear, branched, saturated, unsaturated, and/or cyclic, and wherein hetero atoms either may or may not be present in either or both of the alkyl portion and the aryl portion of the alkylaryl group, provided that the number of carbon atoms in $R_1+R_2+R_3+R_4+R_5+R_6+R_7+R_8+R_9+R_{10}$ is at least about 16, Q- is a COO^- group or a SO_3^- group, d is an integer which is 1, 2, 3, 4, or 5, A is an anion, and CA is either a hydrogen atom or a cation associated with all but one of the Q- groups, and (b) a metal salt of which the metal portion is either (1) a metal ion having a positive charge of ~~+y~~ +p wherein ~~y~~ p is an integer which is at least 2, said metal ion being capable of forming a compound with at least two



chromogen moieties, or (2) a metal-containing moiety capable of

forming a compound with at least two



chromogen moieties.